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Infrared Technology and Applications XXIII Conference chair: Bjorn F. Andresen

Session : **Quantum Well IR Detectors and Their A pplica ions**
Session Chir: Gabby Sarusi

Abstract title: **9 μm cutoff 640x480 Quantum Well Infrared Photodetector (QWIP) Focal Plane Array Camera**
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3. Author listing:

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4. Oral Presentation

5. Abstract:

Long wavelength infrared (LWIR) detectors, 8 μm to 12 μm, are of a great interest for variety of ground-based and space-borne applications. These applications have placed stringent requirements on the performance of the infrared detectors and arrays including high detectivity, low dark current, uniformity, radiation hardness and lower power dissipation. I will discuss the development and progress of GaAs based long-wavelength quantum well infrared photodetectors (QWIP's) to meet those stringent requirements and the demonstration of a 9 μm cutoff 640x480 QWIP focal plane array camera. The noise equivalent temperature difference of the focal plane array is 25 mK at 300 K background, and operating temperature is 70 K. The research described in this paper was performed by the Center for Space Microelectronics Technology, Jet Propulsion Laboratory, California Institute of Technology, and was jointly sponsored by the Ballistic Missile Defense Organization/Innovative Science and Technology Office, and the National Aeronautics and Space Administration, Office of Space Access and Technology.

6. Key Words: Infrared Detector, Quantum Wells, 1 'ocal plane arrays, I ong-wavelength Infrared
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8. Biography:
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Sarath 1). Gunapala received a BS in physics from the LJ1]i\'emit) of Colombo, Sri 1 anka in 1980, and a PhD in physics from the University of Pittsburgh in 1980. He studied properties of thin films as a research associate at the Rutgers University from 1986 to 1988. From 198810 1991 he was a member of technical staff at AT&T Bell I abor ator ies where he participated in the tic\'cltpncm{ of quantum well in frared photodetectors for in frared imaging. f Ie joined the Jet Propulsion I aboratory of Califor nia Institute of Technology in 1992. There, he leads the Quantum Well 1 nfrared Photodetector (QWIP) research gr oup. I Dr . Gunapala has authored o\'er 7 . 5 publ ications, which includes few book chapters on quantum wel i in frared photodetectors.